

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Dennison et al.

Atty. Docket: 91-0473.01/RE

Issued: December 14, 1993

**For: OPTIMIZED CONTAINER STACKED
CAPACITOR DRAM CELL UTILIZING
SACRIFICIAL OXIDE DEPOSITION
AND CHEMICAL MECHANICAL POLISHING**

REISSUE DECLARATION

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Washington, D.C. 20731 on the date below.

Date: _____ Signature: _____

Dear Sir:

Declarants, Charles H. Dennison and Michael A. Walker, each declare as follows:

My residence, post office address and citizenship are as stated by my signature below.

We believe ourselves to be the original, first and joint inventors of the subject matter which is claimed in the captioned patent and for which a reissue patent is sought, on the invention entitled "Optimized Container Stacked Capacitor Dram Cell Utilizing Sacrificial Oxide Deposition And Chemical Mechanical Polishing", the specification of which was filed on December 14, 1995.

I have reviewed and understand the contents of the above-identified specification, including the claims, both as originally filed and as presented therewith. Upon information and belief, the original patent is partly inoperative by reason of our claiming less than we had a right to claim in originally-issued claims 1-60 of U.S. Patent No. 5,270,241.



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In the case of Claim 1 as issued in U.S. Patent No. 5,270,241, the claim is unduly narrow, in that Claim 1 recites the presence of steps beyond formation of the lower capacitor plate through chemical mechanical planarization (as recited at "e", Claim 1). Accordingly, steps "f" through "i" of Claim 1 are not believed to be necessary to patentability. Additionally, Claim 1 is believed to be unduly narrow in that the formation of insulating layer and the forming of a container form therein, as recited in steps "a" and "b" of Claim 1 are unduly limited as to the process and material properties. Additionally, step "d" of Claim 1 is believed to be unduly narrow relative to its recitation of the etch rate of the "second insulating layer". Further, Claim 1 is believed to be unduly narrow as a result of the preamble containing excessive verbiage reciting that the process is one for fabricating "repeatable conductive container structure on a starting substrate's existing topography". Duly submitted Claim 61 is believed to correct these errors by eliminating the recited passages. In the case of the preamble, the recited language has been replaced to merely recite that the process is one for fabricating a uniform "capacitor on a substrate". Steps "a" and "b" of Claim 1 have been amended to recite that the step performed is that of "providing an insulating layer on said substrate, said insulating layer having an opening therein forming a container".

The recitation in step "d" relative to the second etch rate, and the term "superjacent" have been deleted from step "d", and the word "above" substituted in place of "superjacent". These changes are believed to correct the error relative to issued Claim 1.

Newly submitted Claim 62, dependent from Claim 61, corresponds in substance to the first portion of step "f" of existing Claim 1.

Newly submitted Claim 63, dependent from Claim 62, reintroduces the limitations of the first and second etch rates of the "first insulating layer" and the "second insulating layer" and reintroduces the first portion of the limitations found in step "g" of issued Claim 1.

Newly submitted Claim 64, dependent from Claim 63, introduces the portion of the limitations found in step "h" of issued Claim 1, reciting that the third insulating layer is formed over the inner walls of the conductive container.

Newly submitted Claim 64 introduces the forming of a second conductive layer; the second conductive layer was more restrictively recited in step "i" of issued Claim 1. Claim 66 corresponds in substance to issued Claim 3.

Claim 67 corresponds in substance to issued Claim 4. Claim 68 corresponds in substance to the limitations found in issued Claim 5, with appropriate language added to provide necessary antecedent basis.

Issued Claim 31 of U.S. Patent 5,270,241 is believed to be unduly narrow in its recitation of steps "f" through "i".

Claim 11 is believed to also be unduly limited in its recitation of step "a" in that the "first insulating layer" is a "blanketing" layer. Similarly, Claim 11 is believed to be unduly limited in its recitation that "first conductive layer" is "conformal" and is "superjacent" the first insulating layer. Accordingly, the recited terms have been removed, and the term "superjacent" in step "c" of Claim 11 has been replaced in Claim 69 with the term "over". Additionally, the term "superjacent" in step "d" has been replaced with the term "over".

Newly submitted dependent Claim 70, recites the step of removing at least a portion of the exposed first conductive layer until the first insulating layer is exposed, thereby separating the first conductive layer into individual conductive containers having inner and outer walls. A more narrow recitation is found in step "f" of issued Claim 11, which is unduly limited in reciting that the exposing of the first conductive layer is performed "via chemical mechanical planarization".

Newly submitted Claim 70 recites limitations corresponding to the first portion of recitation in step "g" of Claim 11, with the exception of the term "removing" in step "g" has been replaced by the term "etching" in Claim 71.

Claim 72 recites the step of forming a third insulating layer over the inner walls and inner bottom portion of the conductive container, similar to the step recited in step "h" of issued Claim 11, but not reciting that the third insulating layer is "superjacent" or "coextensive" with the walls and inner bottom, and omitting reference to the "partially remaining first insulating layer".

Newly submitted Claims 74 - 76 contain limitations corresponding to those found in issued Claims 13 - 15.

Claim 77 is believed to be unduly limited in its recitation of steps "f" through "i". Additionally, the limitation in step "b" of "patterning and etching" an opening into the first insulating layer is believed to be unduly limited. Further, the use of the terms "superjacent" in steps "c" and "d" are believed to be unduly limiting.

Accordingly, duly submitted Claim 77 omits these limiting terms, substituting "forming" for "patterning and etching", and substituting the term "over" for "superjacent". Further, Claim 77 recites that "at least a portion" of the exposed first conductive upper layer is removed. These amendments are believed to correct the errors found in issued Claims 1, 11, and 31.

Upon information and belief, the above errors occurred as a result of the failure of the attorney who drafted and prosecuted the application to fully appreciate the scope of the invention; and my failure, at the time, to appreciate this error. The error was recently discovered through a review of issued patents belonging to the assignee of U.S. Patent No. 5,270,241.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to be material to patentability to the subject matter claimed in this application, as "materiality" is defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Declarant hereby directs that all correspondence and telephone calls be addressed to:

Michael L. Lynch, Esq.
Chief Patent Counsel
MICRON TECHNOLOGY, INC.
Mail Stop 525
8000 S. Federal Way
Boise, ID 83706-9632

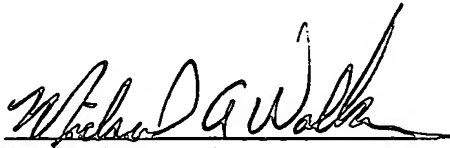
Date: 8-1-96


Charles H. Dennison

Inventor's Full Name: Charles H. Dennison
Country of Citizenship: U.S.A.
Residence Address: 7315 Rhine Ave.
Meridian, ID 83642

Post Office Address: same as above

Date: 8-1-96


Michael A. Walker

Inventor's Full Name: Michael A. Walker
Country of Citizenship: U.S.A.
Residence Address: 10866 GOLDEN RAN
BOISE, ID 83712

Post Office Address: P.O. Box 45144
Boise, ID 83711-5144